IN THE CLAIMS:

1.(Currently amended): A loudspeaker comprising:

an enclosure including a folded horn having a base end and a mouth;

a summing throat forming a portion of the folded horn including the base end, the summing throat increasing in cross sectional area in ~~defining~~ a direction of acoustic energy propagation ~~to promote synchronous and constructive summing of inputs to an acoustic pressure wave building through the summing throat from the base end toward the mouth~~;

a plurality of acoustic transducers housed in the enclosure; and

a plurality of radiating ports, ~~outlets, with at least one~~ each radiating port providing for coupling sound energy from each respective ~~being coupled with each~~ acoustic transducer ~~for transmitting acoustic energy from the acoustic transducers~~ into the summing throat, ~~the~~ each radiating ~~outlets~~ port being disposed at a discrete, acoustically spaced locations along the summing throat with successive locations of the radiating ports occurring at points along the summing throat exhibiting increasing cross sectional area ~~progressing from the base end forward toward the mouth~~ to initiate and synchronously reinforce ~~the~~ an acoustic pressure wave ~~as it moves~~ building from the base end toward the mouth.

2.(previously amended): A loudspeaker as set forth in claim 1, further comprising:

a source of an acoustic range signal; and

transducer drive signal processing circuitry having an individual channel for each of the audio transducers, the individual channels each being coupled to receive the acoustic range signal and each channel including means for setting a relative phase angle for the acoustic range signal in a channel as a function of the acoustic spacing of the radiating outlets to build an acoustic pressure wave in a cascade in the summing throat toward the mouth.

3.(currently amended): A loudspeaker as set forth in claim 2, further comprising:

a plurality of high pressure chambers, at least one acoustic transducer being positioned to direct sound energy into each high pressure chamber, and each high pressure chamber being connected by one of the plurality of radiating ports to the summing throat; and ~~further having an elongated port to one of the radiating outlets.~~

each radiating port terminating along a side of the summing throat at successive locations progressing from the base end of the summing throat toward the mouth of the folded horn with a direction of sound propagation transverse to the direction of sound propagation in the summing throat.

4.(original): A loudspeaker as set forth in claim 3, each channel of the transducer drive signal processing circuitry further comprising:

a band pass filter receiving the acoustic range signal and producing a filtered signal therefrom;

the time delay element receiving filtered signal and producing a delayed, filtered

signal; and

a dynamic phase adjustment element receiving the delayed, filtered signal and adjusting the phase of the signal as a function of frequency to produce a drive signal for an acoustic transducer.

5.(cancelled):

6.(currently amended): A loudspeaker as set forth in claim 4, further comprising:

the acoustic transducers having a small vibrational surface area relative to the predominant range of frequencies to be reproduced; and

a plurality of sealed back chambers, one sealed back chamber housing each acoustic transducer.

7.(original): A loudspeaker as set forth in claim 6, further comprising:

the audio transducers being positioned with respect to one another in a linear array, one to each high pressure chamber.

8.(original): A loudspeaker as set forth in claim 6, further comprising:

a plurality of acoustic transducers coupled to each high pressure chamber.

9.(original): A loudspeaker as set forth in claim 4, wherein the band pass filters, delay elements and dynamic phase adjustment elements are realized in a digital signal processor.

10.(Currently amended): Apparatus comprising:

a plurality of high pressure chambers of substantially the same volume;

a plurality of extended acoustic ports, each extended acoustic port having a constant cross-sectional area between input and radiating ends, and each being connected to one of the high pressure chambers at the input end;

a horn having a summing section and a mouth, the summing section comprising a base end of the horn furthest removed from the mouth and a waveguide extending from the base end toward the mouth which exhibits an increasing cross sectional area along its length from the base end toward the mouth;

the extended acoustic ports being connected into the summing section at acoustically spaced locations with one extended acoustic port connecting to the summing section at the base end of the horn and subsequent extended acoustic ports ~~located~~ connecting to the summing section along a waveguide defining surface, each extended acoustic port terminating on the waveguide defining surface at successive locations of increasing cross sectional area of the waveguide and at sequentially closer locations to the mouth to support a cascade buildup of an acoustic pressure wave propagating from the base end of the summing section toward the mouth of the horn; and

a plurality of identical acoustic pressure wave generators, one of each being coupled to radiate into each high pressure chamber.

11.(Previously amended): Apparatus as claimed in claim 10, further comprising:

means for coordinating operation of the acoustic pressure wave generators so that the pressure waves from the radiating ends of the acoustic ports reinforce one another.

12.(currently amended): Apparatus as claimed in claim 11, wherein the acoustic pressure wave generators are substantially identical, low frequency transducers and are aligned side by side.

13.(currently amended): Apparatus as claimed in claim 11, wherein the acoustic transducers are acoustic low frequency devices and are housed in sealed back chambers.

14.(Previously amended): Apparatus as claimed in claim 11, the means for coordinating further comprising drive circuitry for the acoustic pressure wave generators including delay means for synchronizing merger of the pressure waves upon their meeting in the summing section.

15.(Previously amended): Apparatus as claimed in claim 14, the drive circuitry including a pass band filter associated with each of the acoustic pressure wave generators and a dynamic phase adjustment element for each of the acoustic pressure wave generators.

16.(new) A loudspeaker unit comprising:

a plurality of low frequency acoustic transducers;

a plurality of pre-load chambers, at least one pre-load chamber being associated with each of the plurality of low frequency acoustic transducers;

each low frequency acoustic transducer being disposed to radiate into its associated pre-load chamber;

a horn having a base end and a mouth and formed at least in part by a surface extending from the base end to the mouth; and

a plurality of ports connecting the plurality of pre-load chambers into the horn, each of the plurality of ports having a radiating opening on the surface of the horn, the radiating openings being disposed along the surface extending in line from adjacent the base end toward the mouth substantially parallel to the direction of sound propagation in the horn to support cascade formation of pressure waves from the base end toward the mouth, and with the radiating openings being oriented to direct sound into the horn locally substantially transverse with respect to an axis of sound propagation defined by the horn.

17. The loudspeaker unit in accord with claim 16, further comprising:

a right trapezoid enclosure for the horn, which is folded within the right trapezoid enclosure.